Adit 3200

QUICK START GUIDE

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QUICK START GUIDE

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- Installation Environment
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Unpacking and Inspection

WARNING! OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC DEVICES.

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1. Inspect containers for damage during shipment. Report any damage to the freight carrier for possible insurance claims.
2. Compare packing list with office records. Report any discrepancies to the office.
3. Open shipping containers, be careful not to damage contents.
4. Inspect contents and report any damage.
5. If equipment must be returned for any reason, carefully repack equipment in the original shipping container with original packing materials if possible.
6. If equipment is to be installed later, replace equipment in original shipping container and store in a safe place until ready to install.

Electrostatic Discharge (ESD) Precautions

ESD can damage processors, circuit cards, and other electronic components. Always observe the following precautions before installing a system component.

1. Do not remove a component from its protective packaging until ready to install it.
2. Wear a wrist grounding strap and attach it to a metal part of the system unit before handling components. If a wrist strap is not available, maintain contact with the system unit throughout any procedure requiring ESD protection.

WARNING! INTEGRATED CIRCUITS (ICS) ARE EXTREMELY SUSCEPTIBLE TO ELECTROSTATIC DISCHARGE. UNLESS YOU ARE A QUALIFIED SERVICE TECHNICIAN WHO USES TOOLS AND TECHNIQUES THAT CONFORM TO ACCEPTED INDUSTRY PRACTICES, DO NOT HANDLE ICS.

The ESD warning label appears on packages and storage bags that contain static-sensitive products and components.

Installation Environment

The environment in which you are installing the Adit 3000 must meet the following conditions:

- Operating temperature range: 32° to 104° F (0° to 40° C)
- Storage temperature range: -40° to 158° F (-40° to 70° C)
- Maximum operating altitude: 10,000 ft. (3,048 m)
- Maximum non-operating altitude: 40,000 ft. (12,192 m)
- Relative humidity (non-condensing) range: 0 to 95%

WARNING! THE ADIT 3000 IS DESIGNED FOR WALL AND RACK MOUNTING ONLY. IT IS NOT DESIGNED FOR DESKTOP USE.

User Safety

CAUTION! WHEN USING YOUR TELEPHONE EQUIPMENT, BASIC SAFETY PRECAUTIONS SHOULD ALWAYS BE FOLLOWED TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK AND INJURY TO PERSONS, INCLUDING THE FOLLOWING:

- Do not use this product near water for example, near a bathtub, washbowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
- Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
- Do not use the telephone to report a gas leak in the vicinity of the leak.
- Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
- Refer to the installation section of this manual for a safe and proper installation procedure. All wiring external to this equipment should follow the current provision of the National Electrical Code.

Installation

The following are instructions for a compliant installation of the Adit 3200. Please note the following warnings, before installing the unit.

For wall and rack mount instructions, use the links listed below to the appropriate section:

- Wall Mounting
- Rack Mounting (Optional Feature)

WARNING! OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC DEVICES. SEE *Electrostatic Discharge (ESD) Precautions* ON PAGE **4** FOR DETAILED INFORMATION.

WARNING! THE **T1** NETWORK INTERFACES ARE CERTIFIED WITH THE **FCC** AND INDUSTRY CANADA FOR DIRECT CONNECTION TO PUBLIC COMMUNICATION NETWORKS. SECONDARY LIGHTNING SURGE AND **AC** POWER CROSS PROTECTION IS PROVIDED. UTILIZE LISTED PRIMARY PROTECTORS WITH A NOMINAL **230V** BREAKDOWN RATING TO ENSURE VOLTAGE COORDINATION WITH SECONDARY PROTECTION. THE INSTALLER IS REQUIRED TO FOLLOW LOCAL OR NATIONAL ELECTRIC CODES FOR COMMUNICATION CIRCUITS.

Compliant Installation

NOTE: It is important the DS1/E1 Network Interface Cables are secured separately from the power and Signal Cables.
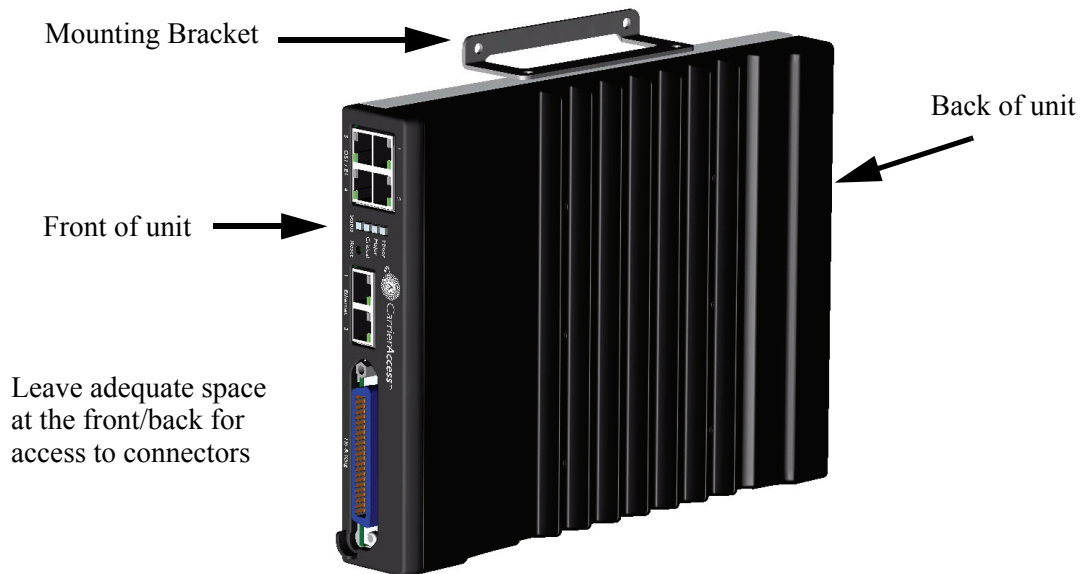
---

1. Inspect the unit.
2. Mount the unit, see *Wall Mounting* on page 7, or *Rack Mounting (Optional Feature)* on page 8 for detailed instructions.
3. Ground the unit. See *Grounding the Unit* on page 12.

WARNING!   THE SEPARATE PROTECTIVE EARTHING TERMINAL PROVIDED ON THIS PRODUCT SHALL BE PERMANENTLY CONNECTED TO EARTH. SEE *Grounding the Unit* ON PAGE **12.**

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4. Connect DS1 (T1) and Ethernet connectors as needed.
5. Connect RS-232 connector and open Terminal Emulator software on your PC. Note: With this connected first, the boot process can be monitored.
6. Connect Power to the unit.
7. Monitor the boot process on your PC, when complete the status light should be green.
8. For any software enabled features, enter the key command. See the **key** command in the Adit 3000 CLI Reference Manual, for detailed information.
9. To verify use the **show version** command.
10. Now you can proceed to provisioning the unit. See *Basic Configuration* on page 22 for information.

Wall Mounting

Before beginning the mounting process, verify that the installation area is a stable environment, clean and free from extremes of temperature, shock, vibration and EMI. See *Installation Environment* on page 4.

Mounting Bracket

Back of unit

Front of unit

Leave adequate space at the front/back for access to connectors

The Adit 3000 is delivered with mounting brackets that can easily be attached for quick and easy wall mounting, as shown in the illustration above.

To install the unit to the wall:

1. Attach the wall mount brackets to the Adit 3000, with wall attachment flange pointing away from the unit, as shown above. Attach with 4 screws provided (2 for each bracket).

2. Mount the unit to the wall using appropriate mounting screws (not included). Note: it is acceptable to mount on drywall with suitable anchor-type mounting screws.
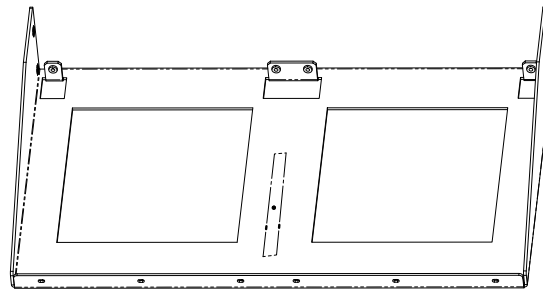
NOTE: The Adit 3000 must be mounted with the brackets on the top and bottom, as shown above.

Rack Mounting (Optional Feature)

NOTE: Rack mounting kits are available for both 19 and 23 inch racks. 1 Rack Unit (RU) of spacing is required above the Adit 3000 in the Rack Mount Unit.

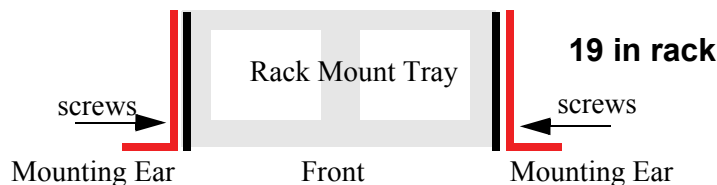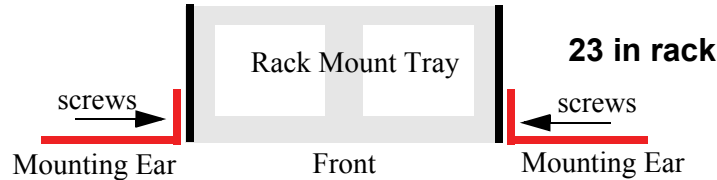### To rack mount the Adit 3000, follow the instructions below:

1. Attach bracket ears to Rack Mounting Tray using four #10-32 x 1/4" screws on each side. The Mounting Ears can be used for both a 19 or 23 inch rack. The drawing below shows a top view of the 2 versions.
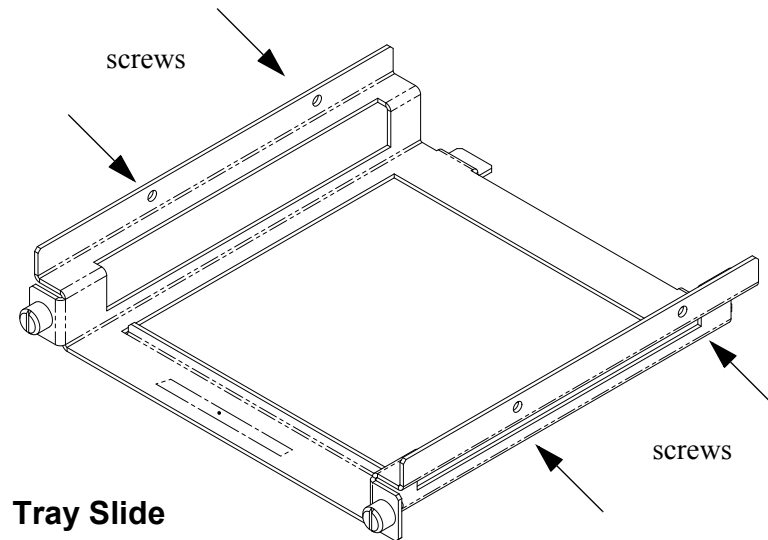
Rack Mounting Tray   **Mounting Ear**

```
screws →    Rack Mount Tray    ← screws    23 in rack
Mounting Ear       Front        Mounting Ear
```
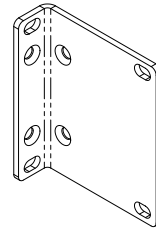
```
screws →    Rack Mount Tray    ← screws    19 in rack
Mounting Ear       Front        Mounting Ear
```

2. Attach the Rack Mounting Tray assembly (with mounting ears attached) to rack, using four #10-32 x 1/4" screws (two on each mounting ear).
3. Remove wall mount and screws, if attached, from Adit 3000 unit.
   Note: Adit 3000 and wall mounting bracket are not assembled from the factory.

4. Place the Adit on the Tray Slide and attach with 4 screws removed in step 2.

screws

screws

Tray Slide

5. Slide the assembled piece (Adit 3000 and Tray Slide) onto the installed Rack Mounting Tray.
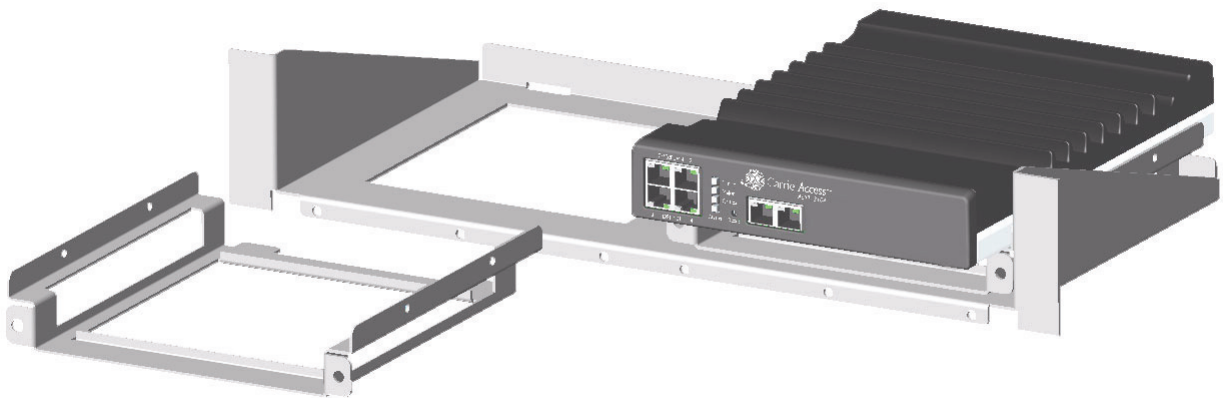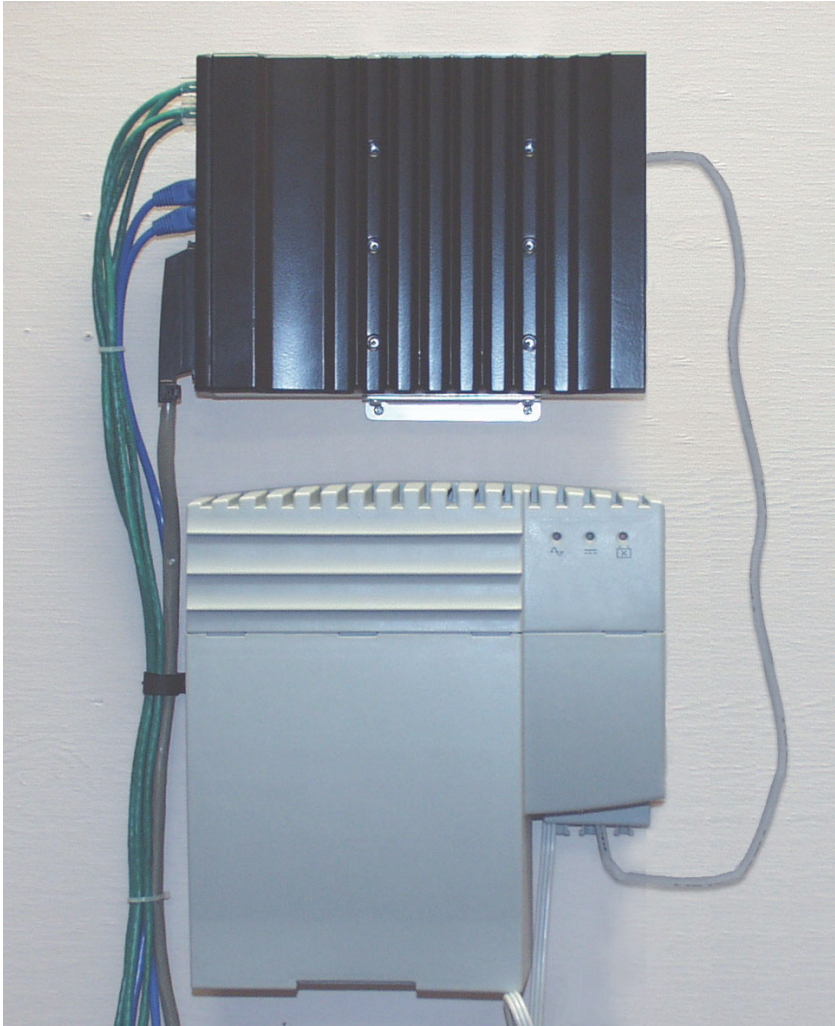

6. Secure the Tray Slide to the Rack Mounting Tray with the attached screws on the Tray Slide.

Adit 3104, 3200, 3300 and 3400 Battery Backup

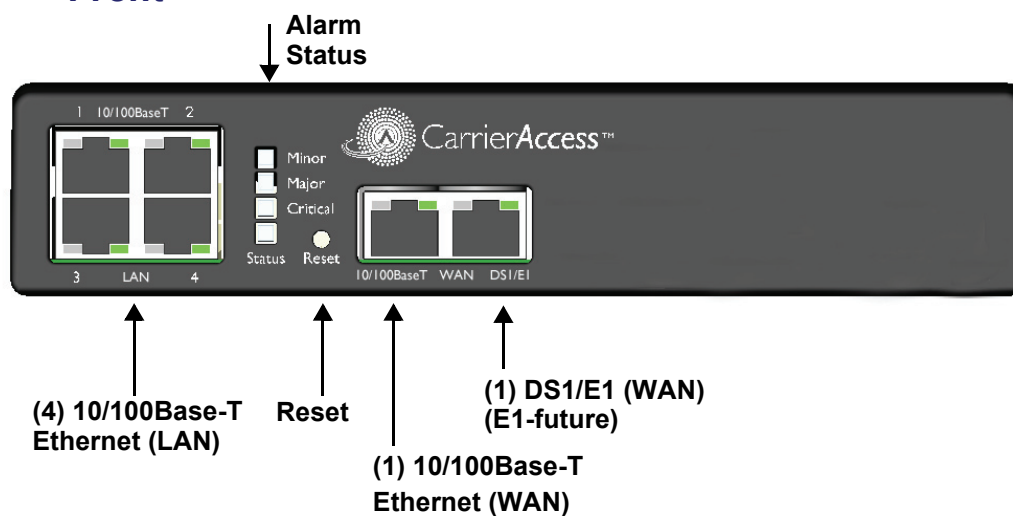The Adit 3104, 3200, 3300 and 3400 Battery Backup (P/N 730-0132), is a wall-mount battery backup unit to provide up to 8 hours battery backup.

Please see the Battery Backup User Manual for product information and installation instructions, which is provided with unit.
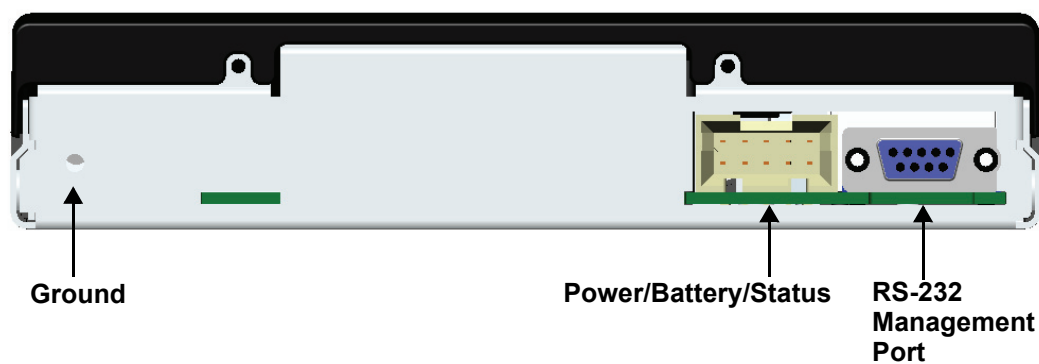
Note: This is an optional feature.

Chassis Overview

Front

**Alarm
Status**

**(4) 10/100Base-T
Ethernet (LAN)**

Reset

**(1) DS1/E1 (WAN)
(E1-future)**

**(1) 10/100Base-T
Ethernet (WAN)**

Back

Ground

Power/Battery/Status

**RS-232
Management
Port**

Interface Connectors

The following are the Adit 3200 interface connectors:

Front of Adit

- (1) DS1 WAN port (RJ-48C). Note: E1 will be in a future release.
- (1) 10/100Base-T WAN port (RJ-45)
- (4) 10/100Base-T switched LAN ports (RJ-45)

Back of Adit

- RS-232 craft port connector for local management
- Power input connector
- Ground connector

Grounding the Unit

WARNING!   **THE ADIT 3200 IS REQUIRED TO BE PERMANENTLY GROUNDED FOR THE PROTECTION OF USERS AND SERVICE PERSONNEL.**

Chassis ground is located on the back of the unit. To ground the unit:

1. Connect a minimum 14 AWG ground wire with a #8 ring tongue terminal (not included) to the chassis ground on the back of the unit. Secure with the 8-32 screw and lock washer provided.

2. Connect the opposite end of the ground wire to a suitable earth grounding point such as a building grounding electrode, metal water pipe, or metal building structure that is in compliance with article 250 of NEC.
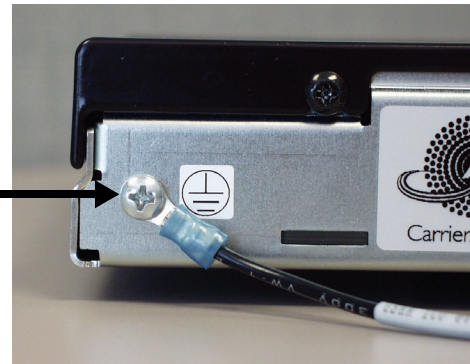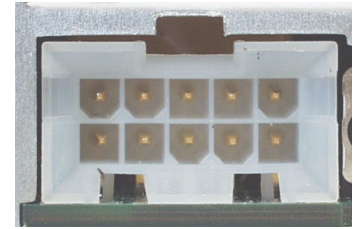
Power

The Adit 3000 is powered by a limited -48 VDC Power source. The following options are available:
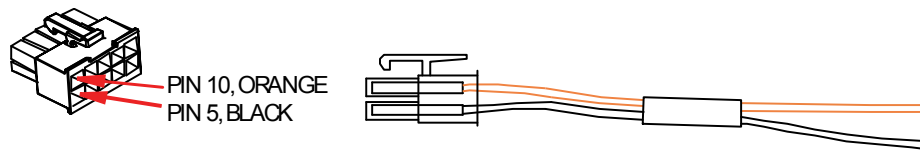
- AC/DC Converter
- Battery Backup module

AC/DC Converter

An AC/DC Converter generates 48VDC from any worldwide AC power source.

To connect AC power:

1. Plug power connector from AC/DC converter into rear of Adit 3000.

2. Connect AC/DC converter to wall outlet.

3. A green light should appear on the Status LED on the front of the unit.

PIN 10, ORANGE
PIN 5, BLACK

CAUTION! INCORRECT WIRING OF CORD MAY CAUSE EXTERNAL FUSE FAILURE.

WARNING! POSSIBLE SHOCK HAZARD EXISTS, PLEASE FOLLOW INSTRUCTIONS CAREFULLY.

To connect -48 VDC power:

1. Wire appropriate connector to open end of the DC Power cable.
   Orange = -48   Black = Ground (+)

2. Plug the DC power connector in the -48 VDC input power connector.

3. Apply power to connector from -48 VDC power source.

4. A green light should appear on the Status LED on the front of the unit.

WARNING! EXTERNAL FUSE PROTECTION IS REQUIRED ON THE **48VDC** INPUT WHEN CONNECTED TO A **DC** POWER SOURCE NOT SUPPLIED BY **C**ARRIER **A**CCESS.

Fuse Recommendations, or equivalent:

| Recommended Fuse	AMP Rating
Littelfuse 48101.5	1.5 Amp
Bussman GMC-1.5A	1.5 Amp

Battery Connection

The Adit 3000 Battery connection is provided for Battery Backup. See *Adit 3104, 3200, 3300 and 3400 Battery Backup* on page 8 for additional information.

RS-232 Craft Port (Female DB-9)

The RS-232 craft port connector (female) is for connection to an external PC or Hayes-compatible modem for local or remote configuration, management, and performance monitoring using the Adit 3000 Command Line Interface (CLI).

The RS-232 craft port connects via a female DB-9 connector on the Adit 3000.
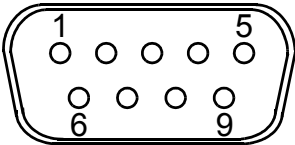
The pinouts are as follows:

Pin Number	Direction	Description
1	Outbound	Carrier Detect
2	Outbound	Receive Data
3	Inbound	Transmit Data
4	Inbound	Data Terminal Ready
5	N/A	Signal Ground
6	Outbound	Data Set Ready
7	Inbound	Request to Send
8	Outbound	Clear to Send
9	N/C	Not connected

DS1/E1 Connection Ports

Each DS1/E1 connection port is equipped with a standard RJ-48C (female) on the Adit 3000 unit. Note: E1 will be available in a future release.

The pinouts are as follows:
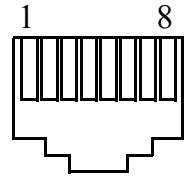
DS1/E1 RJ-48C

The pinouts are as follows:

Note: This is a hub pinout, you will need a straight cable to connect to a PC.
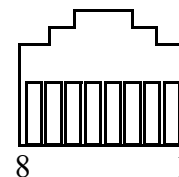
Pin	Name	Description
1	Receive Ring	Receive from DS1 network
2	Receive Tip	Receive from DS1 network
3	N/C	Not connected
4	Transmit Ring	To DS1 network
5	Transmit Tip	To DS1 network
6-8	N/C	Not connected

The LEDs are as follows (left LED only):

State	Description
Off	Off line
Green	Normal
Red	Loss of Signal (LOS)
Yellow	Bipolar Violation (BPV)
Flashing Green	Loopback active
Flashing Yellow	Yellow Alarm (Remote Alarm Indication)
Flashing Red (Slow)	Loss of Frame (LOF) or Alarm Indication Signal (AIS)
Flashing Red (Fast)	Self-test Failure

10/100Base-TX Ethernet

The 10/100Base-TX Ethernet (female) ports provide connectivity for Router WAN and/or LAN ports and for management connection via Telnet and/or SNMP to a Network Management System.

8   1

### Ethernet (RJ-45)

The pinouts are as follows:

Pin	Name	Description
1	Receive +	Receive from network
2	Receive -	Receive from network
3	Transmit +	Transmit to network
4-5	N/C	Not connected
6	Transmit -	Transmit to network
7-8	N/C	Not connected

The LEDs are as follows:

LED	State	Description
Left LED	The left LED shall show Link Status.	
	Off	Link Down
	Green	Link Up
	Flashing Green	Traffic on Link
	Yellow	Collision status
Right LED	The right LED shall indicate Link Speed.	
	Off	10 Mbit/sec, down or not connected
	Green	100 Mbit/sec

Reset Button

The system can be reset by pressing the reset button located on the front panel.
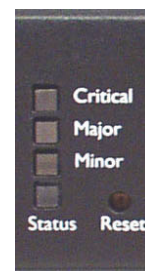
Alarm/Status LEDs

LED	State	Description
Critical	Off	No critical alarms present
	Red	Critical alarms present. Critical alarms include: user-configured manor environmental inputs.
Major	Off	No major alarms present
	Red	Major alarm present. Major alarms include: user-configured manor environmental inputs, DS1 short, DS1 open, DS1 facility alarm, DS1 RAI, DS1 AIS, DS1 LOF, DS1 LOS, WAN fault, Ethernet fault and dead card alarms.
Minor	Off	No minor alarms present
	Red	Minor alarms present. Minor alarms include: user-configured minor environmental inputs, DS1 excessive line code violations.
Status	Off	No power to system
	Green	Application running, no detected system problems.
	Green Flashing	Power-On Self Test (POST) successful. System booted. Loading Application.
	Green/Yellow	Flashing alternate colors. Application Self Test in Process.
	Yellow	Yellow while booting. If this stays a steady yellow the Power-On Self Test (POST) failed.
	Yellow Flashing	Power-On Self Test (POST) In Process.
	Red	System Failure

Web-Based Management

The web-based management interface allows you to control various system parameters. The interface is accessed through a web browser.

To access the management console:

NOTE: The following assumes that you have connected the PC to the LAN port of the Adit 3200.

1. Launch a web browser on your PC in the LAN to which the Adit 3000's LAN port is connected. Note: If connection to the 3000 is to be through an Ethernet or T1 WAN, the remote admin WAN access must be enabled with the following command sequence:

| Command	Description
`Username: admin` `Password: ********`	Log into the system (username and password).
`Adit 3200> enable`	Enter the Privileged mode.
`Password: ********`	Enter password for the Privileged mode.
`#configure terminal`	Enter the Configuration mode.
`(config)# remote-admin web` `primary-port enable`	Enable remote web admin.

2. Type the Adit 3000's IP address or name in the address bar.
   Example: http://192.168.1.1.

   - Default IP address is **http://192.168.1.1**
     Note: to display the current IP address of the systems, use the following CLI command:
     #show interface ethernet 1 (LAN)
     #show interface ethernet 2 (Eth WAN)

3. Login to the unit.
   Enter User Name and Password. Note: these setting should be changed from the default settings after the initial login.

   - Default user name is **admin**
   - Default password is **admin 123**

NOTE: After a few minutes of inactivity, the session will automatically timeout and the operator will be required to log in to continue the session.

WARNING! IF YOUR USER NAME AND PASSWORD ARE SET TO THE DEFAULT SETTING, IT IS RECOMMENDED THAT YOU MODIFY THEM FOR SECURITY PURPOSES.

Setting up a CLI Connection

A CLI connection will require the LAN or WAN IP address of the unit. Note: If the WAN IP address is used, the remote admin WAN access must be enabled with the following command sequence:

| Command	Description

`Username: admin`
 	
`Password: ********`
	Log into the system (username and password).

`Adit 3200> enable`	Enter the Privileged mode.
`Password: ********`	Enter password for the Privileged mode.
`#configure terminal`	Enter the Configuration mode.
`(config)# remote-admin web` `  primary-port enable`	Enable remote web admin.

NOTE: For Adit 3200 CLI commands see the *Adit 3000 CLI Reference Manual.* This is a separate document and can be found on the CD that is provided with the product, or on the Carrier Access customer website.

To connect with CLI, set up the connection:

- If connecting via the Ethernet 100Base-TX connection, use a Telnet TCP/IP program to access the CLI. This requires an IP address of the unit.
  Note: to display the current IP address of the unit, use the **ifconfig** command.

- If connecting via RS-232, the port settings should be set to:
  Bits per second: **115200**   Data bits: **8**
  Parity: **None**   Stop bits: **1**
  Flow control: **None**

- Set your Terminal Emulation to: **VT100**

NOTE: When using Tera Term (Telnet program) TCP/IP, CLI commands will not be recognized until the following setup is completed.

- In Tera Term go to **Setup/Terminal**
- Set the **New-line/Transmit** value **CR+LF**
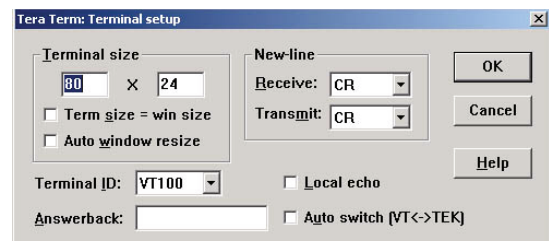
Log in

After successful connection, via telnet or HyperTerm, the user must login. Default Logins are:

Login: **admin**

Password: **admin123**

After successful login the prompt will be displayed as follows:

Adit 3200>

NOTE: It is recommended that you change your password from the default.

Key Enabled Software Features

The Adit 3200 has additional features that are not provided on the base system. These features can be purchased with the product or added later as needed. These features are enabled via a Software Key (example: G.729). The number of keyed features may expand with the development of the product, therefore to see a list of current keyed features, or to purchase a key, contact Carrier Access Customer Service or Sales.

To enter a software key, use the following CLI command:

```
Syntax: (config)# key {key-code}
```

```
Example: (config)# key cxusdfutkj3diosn412C
```

NOTE: Keys may only be entered through the CLI (not through the GUI).

The Key Enabled Software Features are displayed on the **Advanced/Technical Information** window.
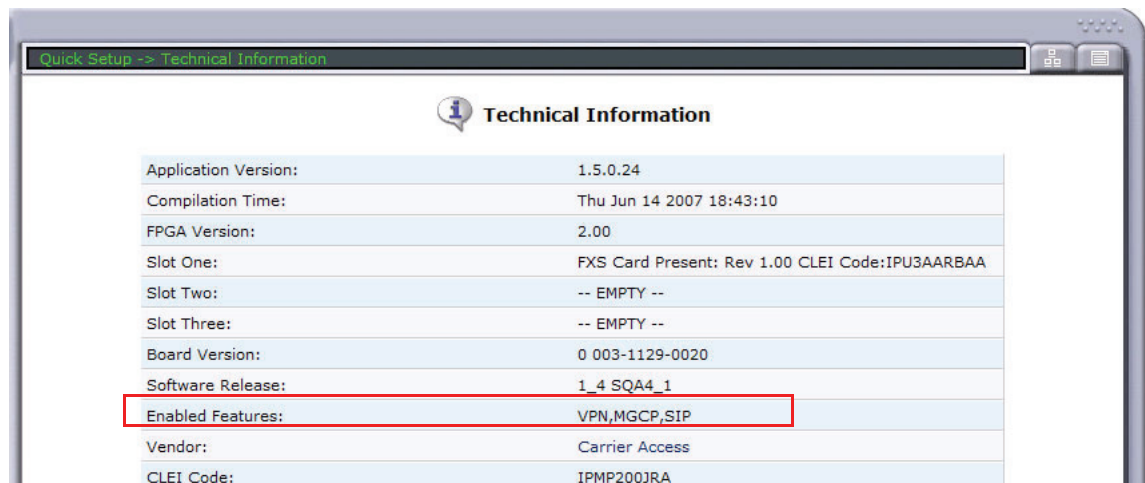
This information is also displayed with the following CLI command:

```
Adit 3200> show version
Application Version: 1.5.1
Compilation Time: Thu Jun 14 2007 18:43:10
FPGA Version: 2.00
Board Version: 0 003-1129-0020
IXP400 Software Release: 1_4 SQA4_1
Voice Slot 1 : FXS Card Present: Rev  1.00  CLEI Code:IPU3AARBAA
Voice Slot 2 : -- EMPTY --
Voice Slot 3 : -- EMPTY --
Vendor: Carrier Access
CLEI Code: IPMP200JRA
Product Features:
 VPN  enabled.
 MGCP enabled.
 SIP  enabled.
```

Basic Configuration

The following configuration is divided into logical sections, where each section configures an additional function. The first must be configured before the second and so forth, however, you may stop at any section and not add the following feature.

NOTE: The order in which commands are entered can affect the successful provisioning of the Adit 3200.

- **Setup Adit 3200 for access via Web-Browser**
- **Restore Factory Defaults**
- **Modify Default Admin User**
- **Configure Ethernet WAN Interface**
- **Configure Serial 1 as WAN**

Setup Adit 3200 for access via Web-Browser

The following steps will configure the Adit 3200 to allow access to the Web Browser for configuration, through one of the 4 10/100Base-T LAN connections.

Note: for LAN access, no additional configuration is required to access the Adit using the web browser.

To configure the WAN access:

1. Connect to the CLI via the DB-9 RS-232. See *Setting up a CLI Connection* on page 19.

2. Enable the remote admin WAN access with the following command sequence:

Command	Description
`Username: admin` `Password: ********`	Log into the system (username and password).
`Adit 3200> enable`	Enter the Privileged mode.
`Password: ********`	Enter password for the Privileged mode.
`#configure terminal`	Enter the Configuration mode.
`(config)# remote-admin web` `  primary-port enable`	Enable remote web admin.

Restore Factory Defaults

If the unit is not out-of-the-box, you may want to verify that the unit is set to defaults. Note: This will reset the IP address back to the default setting of 192.168.1.1.

In the web-browser:

- Select **Advanced** from the Navigation bar
- Select **Restore Defaults**
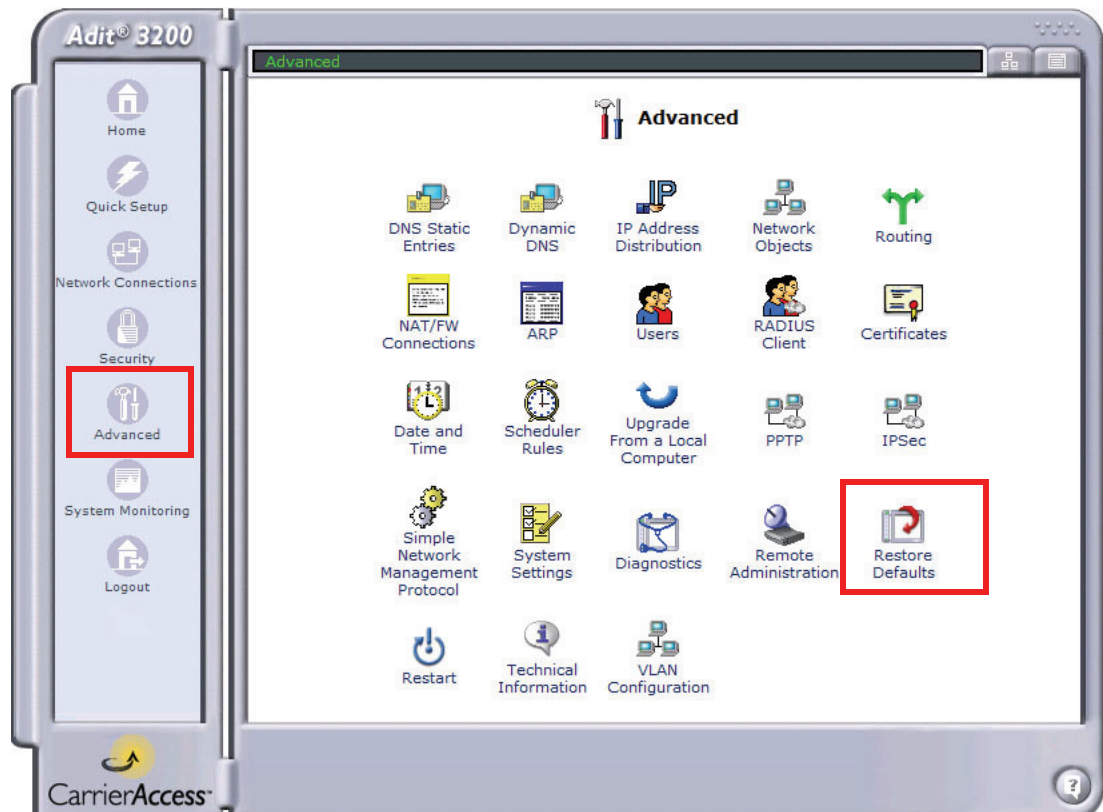
- Select **OK** to restore defaults
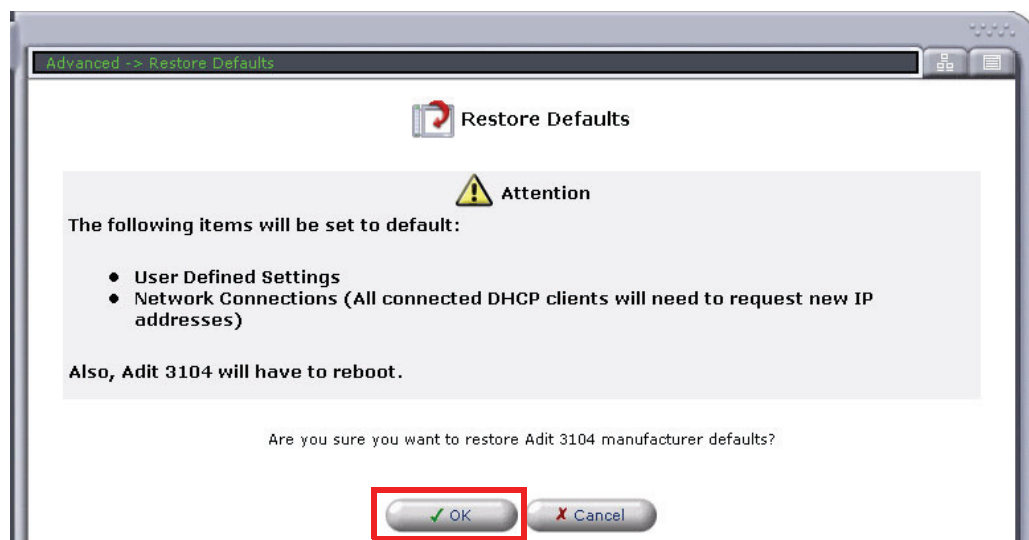
Modify Default Admin User

For security purposes it is recommended that the Administrator User be changed from the default settings.

Modify the Administrator User in the web-browser:

- Select **Advanced** from the Navigation bar
- Select **Users** icon
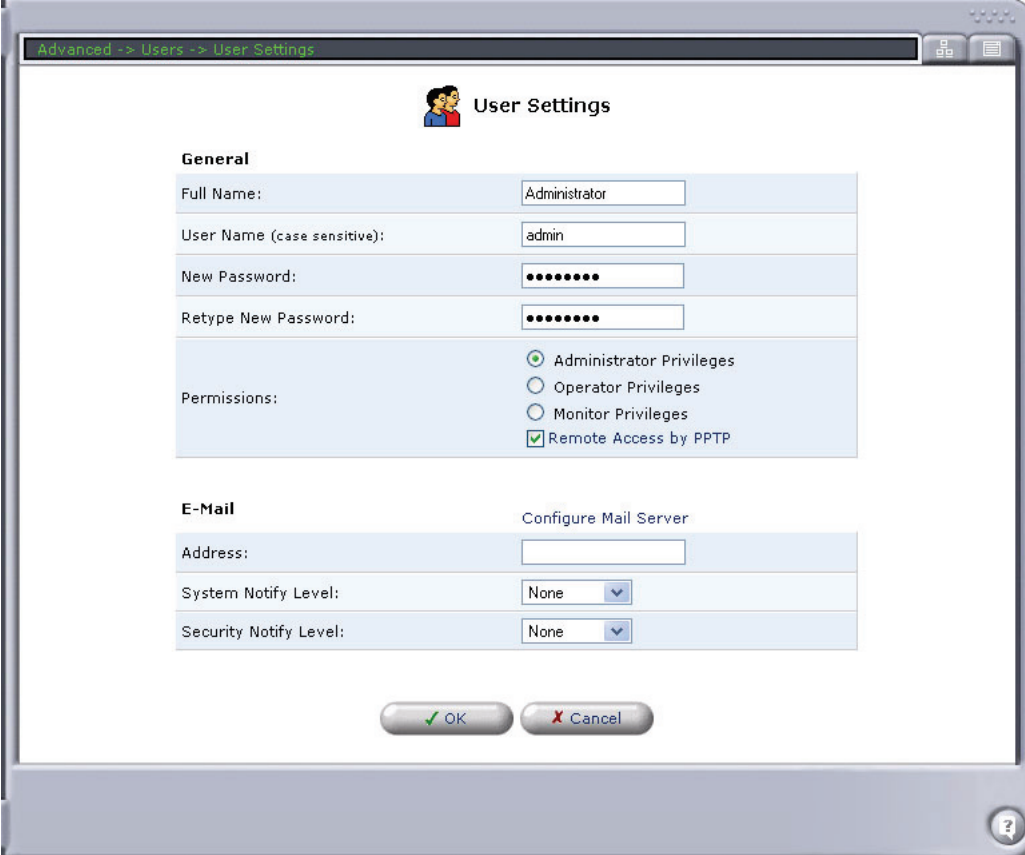
- Select **Administrato**r, to open the profile.
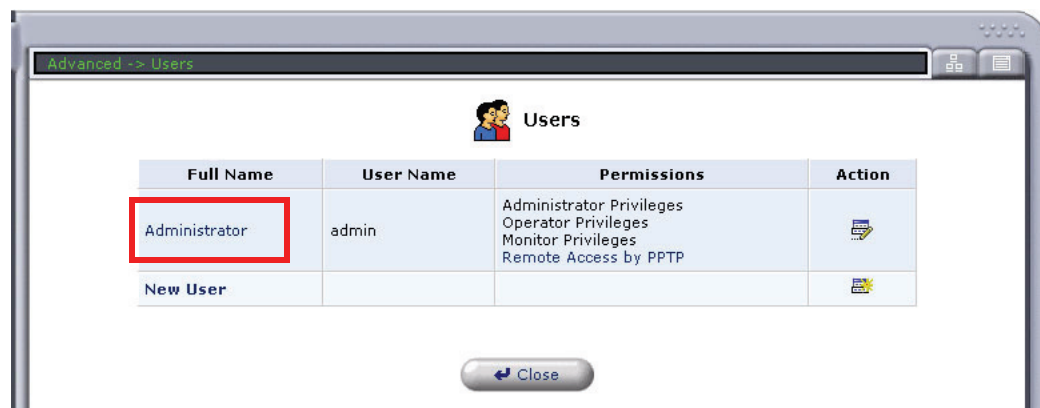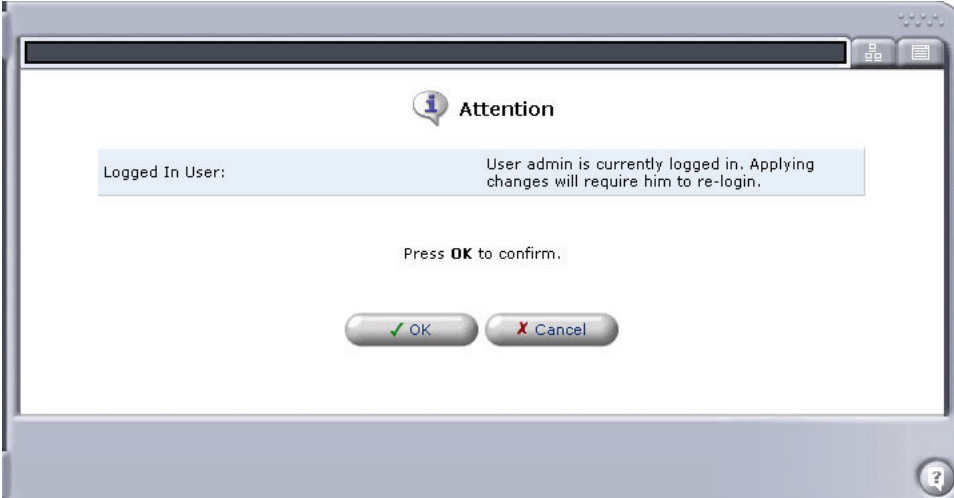
- Modify the User information, and select **OK** to save. It is important to note that you need to have a minimum of one user with **Administrative Privileges**. For users with other access levels, add a **New User**.
  Note: For security purposes, the password should be changed.

- You will be required to login again, if you have modified the User Profile that you are logged in with.

Configure Ethernet WAN Interface

In the web-browser:

1. Select **Network Connections** from the Navigation bar.
2. It is recommended that you disable/delete the Serial1 port.
3. Select (click) **Ethernet 2** (WAN Ethernet) connection to configure.
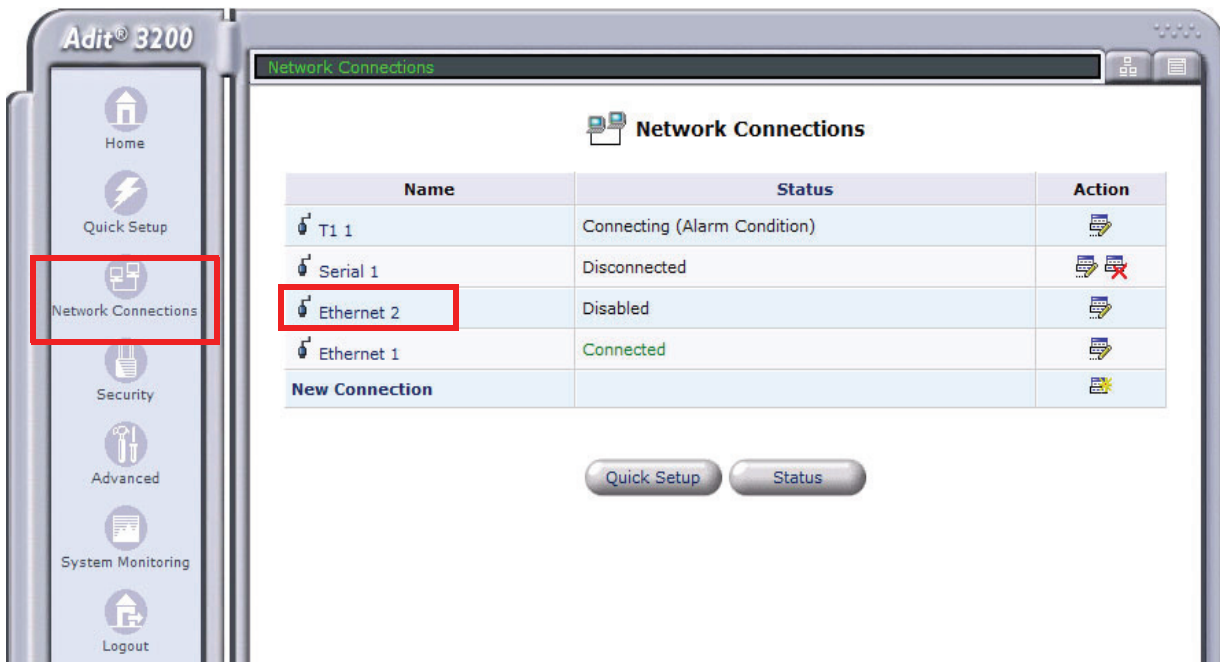
4. Select the **Enable** button, to configure the WAN Ethernet up (or in-service).
5. Select the **Settings** button.
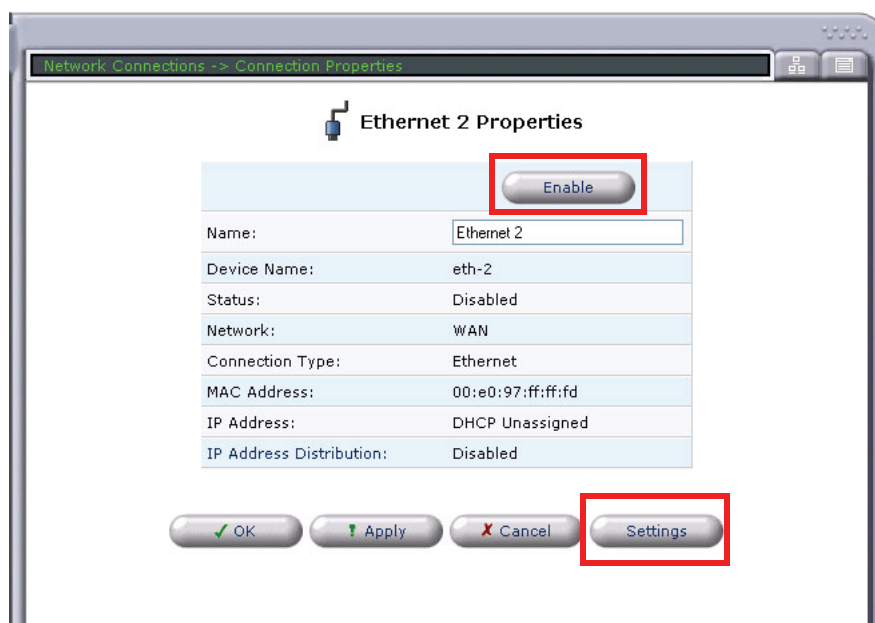
6. Set **Internet Protocol** to **Obtain an IP Address Automatically**, from the pulldown menu. This will enable the Adit 3200 as a DHCP Client. Leave the other fields to their default settings.

7. Select **Apply** to apply the new settings.

Configure Serial 1 as WAN

In the web-browser:

1. Select **Network Connections** from the Navigation bar.

2. Select **Serial 1**.

3. Select **Settings** button.

4. Set **Network** to **WAN**.

5. Select **Apply** to apply the new settings.